

REMARKS

I. Status of Claims

Claims 1, 7, 10, 12-13, and 22 are pending. Claims 1 and 22 are independent and currently amended.

Claim 22 stands objected to under 35 CFR 1.75 as being a substantial duplicate of claim 1.

Claims 1, 7, and 22 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sakai (JP Publication 63-119166) (hereinafter “Sakai”) in view of Menon (US Pat. No. 7,063,905) (hereinafter “Menon”).

Claims 1, 7, 10, 12-13 and 22 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hamada et al. (JP2001-357869) (hereinafter “Hamada”) in view of Sakai.

The Applicant respectfully requests reconsideration of these rejections in view of the foregoing amendments and the following remarks.

II. Applicant’s Statement of Substance of Examiner Interview

In compliance with M.P.E.P. 713.04, the Applicant provides this Statement of Substance of Interview concerning the interview conducted on December 14, 2009 with Examiner Walker, and the Applicant’s representative Xiaomin Huang (“Applicant”).

(A) Exhibits. N/A.

(B) Claim(s). 1 and 22.

(C) References Discussed. Menon, Hamada and Sakai.

(D) Amendments. Applicant proposes to amend claims 1 and 22 to recite, in relevant part: “a plurality of ribs that are provided ~~between~~ in the grooves.”

(E) Principal arguments of Applicant. Applicant proposed to perfect priority by submitting a verified English translation of the Priority Document (Japanese Patent Application No. 2002-345955) and argued that the effective filing date of Menon was January 27, 2003, and thus Menon was not a proper 103(a) reference. Further, Applicant argued that Hamada and Sakai, even in combination, did not disclose or suggest “a plurality of ribs that are provided in the grooves” as recited in claims 1 and 22.

(F) Other matters. None.

(G) Results. The Examiner indicated that the Applicant's arguments were persuasive but further searching might be needed.

III. Claim Objections

Claim 22 stand objected to under 35 CFR 1.75 as being a substantial duplicate of claim 1. Applicant respectfully requests that the Examiner hold the objection of claim 22 in abeyance until the indication of allowable subject matter.

IV. Pending Claims and Rejections under 35 U.S.C. § 103 Over Sakai and Menon

Claims 1 and 22 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sakai in view of Menon.

Applicant respectfully submits Menon is not a proper 103(a) reference. In a separate paper (which will be filed subsequent to this response), the Applicant will submit¹ a verified English translation of the Priority Document (Japanese Patent Application No. 2002-345955) perfecting the priority date of November 28, 2002. Applicant respectfully submits that, the effective filing date of the Menon patent is January 27, 2003, which will be subsequent to Applicant's perfected priority date of November 28, 2002. Accordingly, upon the Applicant perfecting priority by submitting a certified translation of the priority document, Applicant respectfully submits that the rejection that relies upon Menon be withdrawn.

Further, please note that although Menon was submitted in an Information Disclosure Statement filed July 7, 2009, Applicant explicitly disclaimed the submission of the Information Disclosure Statement to be construed as an admission the information cited as prior art. *See* page 1 of the Information Disclosure Statement filed July 7, 2009.

Therefore, for at least these reasons, (upon priority perfection) claims 1 and 22, as well as claim 1's dependent claims, are patentable over Sakai and Menon.

V. Pending Claims and Rejections under 35 U.S.C. § 103 Over Hamada and Sakai

Claims 1 and 22 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Hamada in view of Sakai.

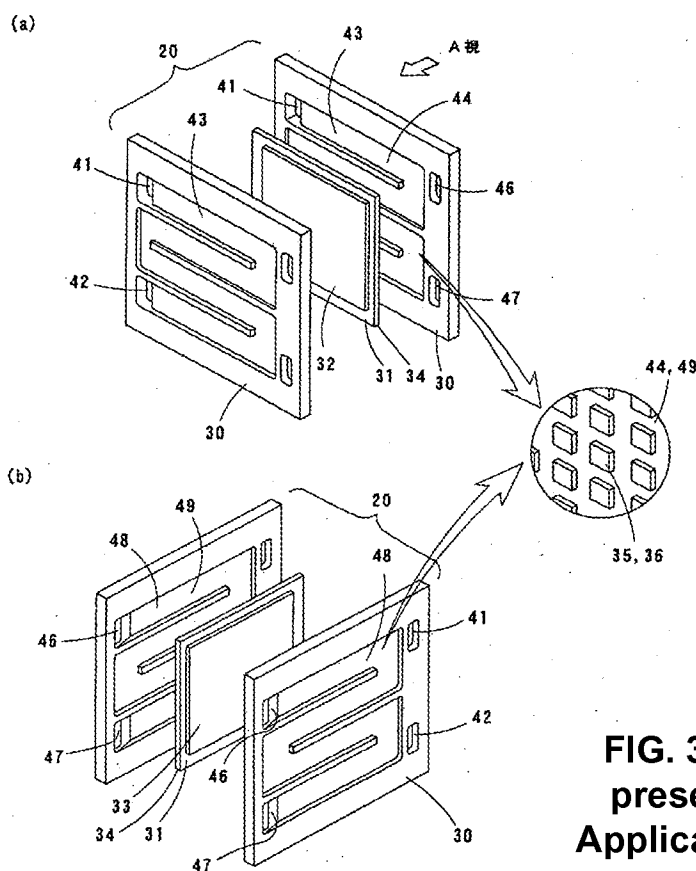
Applicant respectfully submits that claim 1 is patentable over the cited references at least because it recites, *inter alia*, "...each cell of the cell blocks having at least one separator ***including a plurality of grooves*** that form a gas passage of the separator and ***a plurality of ribs that are provided in the grooves***, wherein ***a pitch*** between the ribs of the first cell block ***is larger than a pitch between the ribs of the second cell block***, and ***a cross-sectional area of gas paths formed between the ribs*** of the first cell block are larger than gas paths formed between the ribs of the second cell block ..." (emphasis added)

Applicant respectfully submits that claim 22 is patentable over the cited references at least because it recites, *inter alia*, "...each cell of the cell blocks having at least one separator ***including a plurality of grooves*** that form a gas passage of the separator and ***a plurality of ribs that are provided in the grooves***, wherein ***a pitch*** between the ribs of the first cell block ***is larger than a pitch between the ribs of the second cell block***, and ***a cross-sectional area of gas paths formed between the ribs*** of the first cell block are larger than gas paths formed between the ribs of the second cell block ..." (emphasis added)

Certain embodiments of the present invention are directed to a fuel cell stack that may be formed by stacking several cells together. As shown in FIGs 3(a) and 3(b) reproduced below, each cell 20 may comprise a pair of separators 30 and each separator 30 may comprise a concave groove 43 on one side and another concave groove 48 on another side. The groove 43 may form an oxidizing gas passage 44 and the groove 48 may form a fuel gas passage 49. As shown in the circle for the details of the grooves 43 and 48, a plurality of ribs 35, 36 are provided in the grooves and the gas passages 44 and 49 are formed in the gaps between the ribs. *See* [0026] of the published Application (2004/0115486). Thus, in the embodiments of the present invention, changing the cross-section of gas packages may be accomplished by changing the size of the gap

¹ We expect to submit the English translation of the priority document shortly after this filing.

(e.g., the pitch) between the ribs instead of changing the width of the grooves. Such that, in at least one embodiment of the present invention, a separator 30b of a cell 20b may have smaller ribs compared to a separator 30. Consequently, a pitch between the ribs of the separator 30b may be larger than a pitch between the ribs of the separator 30. Therefore, embodiments of claims 1 and 22 of the present invention require “each cell of the cell blocks having at least one separator *including a plurality of grooves* that form a gas passage of the separator and *a plurality of ribs that are provided in the grooves*, wherein *a pitch* between the ribs of the first cell block *is larger than a pitch between the ribs of the second cell block.*”

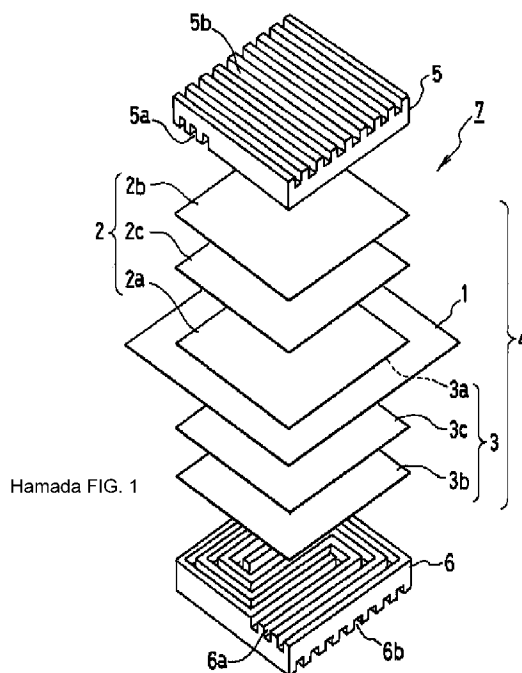


**FIG. 3 of
present
Application**

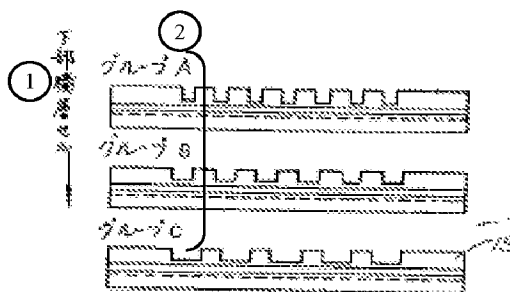
As pointed out in the previous Response filed on September 1, 2009, Applicant has argued in December 4, 2007, January 4, 2008, July 31, 2008 and August 28, 2008, responses, that neither Hamada nor Sakai teaches each and every limitation of the invention of claim 1 singly and/or in combination with one another. The arguments set forth at least in the August 28, 2008 response appeared to be persuasive, since in the September 25, 2008 Office Action,

Examiner Walker withdrew the rejections based upon Hamada and Sakai as being moot in view of a new ground of rejection (which presumably the Examiner thought was better than the rejection of record). Now, almost one year later, following his purported attempts to rely upon Katsuo to modify Hamada, the Examiner has again applied Hamada and Sakai.

That stated, with respect to Hamada, this reference merely discloses a fuel cell stack with a plurality of cells shown in FIG. 1 of Hamada, which is reproduced below. As shown in Hamada's FIG. 1, each of Hamada's separator 5 or 6 contains a gas passage 5a or 6a on the inside surface and a water flow way 5b and 6b on the outside surface. However, neither the gas passage nor the water flow way of Hamada shows "***a plurality of ribs that are provided in the grooves***" as required by claims 1 and 22. At most, Hamada shows ribs between the grooves instead of ribs provided ***in the grooves***. Consequently, Hamada does not disclose or teach "***a pitch*** between the ribs of the first cell block ***is larger than a pitch between the ribs of the second cell block***" as further required by claims 1 and 22. Moreover, in contrast to the invention of claims 1 and 22 that changes "***a cross-sectional area of gas paths formed between the ribs,***" Hamada discloses that a cross-sectional area of a gas path is changed by changing a depth of a groove. See Hamada, [0039] (English translation obtained from the JPO website). Hamada ***does not*** disclose to change the pitch between the ribs between grooves (e.g., wherein a pitch between the of one cell block is different from a pitch between the ribs of another cell block). Because Hamada never shows ribs in the grooves, of course, Hamada never mentions changing the pitch between the ribs in the grooves.



Regarding Sakai, this reference does not even mention separators of a fuel cell stack. Instead, Sakai concerns anode electrodes and cathode electrodes are themselves ribbed with gas passages. *See* page 3 of Sakai (English translation provided by the Office). Further, as shown in FIG. 1(B) of Sakai below, Sakai at best shows grooves for gas passages and ribs between the grooves. Nothing in Sakai shows “*a plurality of ribs that are provided in the grooves*” as required by claims 1 and 22. Hence, Sakai does not disclose or teach “*a pitch* between the ribs of the first cell block *is larger than a pitch between the ribs of the second cell block*” as further required by claims 1 and 22. Furthermore, in contrast to the invention of claims 1 and 22 that changes “*a cross-sectional area of gas paths formed between the ribs*,” Sakai discloses that a cross-sectional area of a gas path is changed by widening the groove itself. Sakai *does not* disclose to change the pitch between the ribs in the grooves (e.g., wherein a pitch between the ribs in the grooves of one cell block is different from a pitch between the ribs in the grooves of another cell block). Therefore, Sakai does not cure the critical deficiencies of Hamada.



Sakai Figure 1(B)

In addition, as discussed in MPEP 2143.01, obviousness can *only* be established by combining or modifying the *teachings of the prior art* to produce the claimed invention where there is some *teaching, suggestion, or motivation* to do so. *In re Kahn*, 441 F.3d 977, 986, 78 USPQ2d 1329, 1335 (Fed. Cir. 2006) (discussing rationale underlying the motivation-suggestion-teaching *test* as a guard against using hindsight in an obviousness analysis).

Also, as discussed in *KSR Int'l Co. v. Teleflex, et al.*, No. 04-1350, (U.S. Apr. 30, 2007), it remains necessary to identify the reason why a person of ordinary skill in the art would have been prompted to modify the Hamada and/or Sakai in the manner as recited in the inventions of claims 1 and 22. Obviousness cannot be sustained on mere conclusory statements.

Accordingly, it is respectfully submitted that, for at least these reasons, claims 1 and 22, as well as their dependent claims, are patentable over the cited references.

VI. Conclusion

In light of the above discussion, the Applicant respectfully submits that the present application is in all aspects in allowable condition, and earnestly solicits favorable reconsideration and early issuance of a Notice of Allowance.

The Examiner is invited to contact the undersigned at (202) 220-4420 to discuss any matter concerning this application. The Office is authorized to charge any fees related to this communication to Deposit Account No. 11-0600.

Respectfully submitted,

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